User Manual ODM-300

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Digital "Free To Air" Receiver

ODM-300

FOREWORD

We congratulate you on your choice of digital satellite tv receiver. The ODM300 is manufactured in Scotland, UK by RSD Communications Ltd. to very high standards and is continually upgraded with new software. Please consult your dealer or the RSD WWW site at http://www.rsd-communications.co.uk for the latest details.

SAFETY INSTRUCTIONS

Place your satellite receiver on a protected, dry and well ventilated spot. Never put anything on top of the satellite receiver as this prevents the necessary ventilation. The satellite receiver contains sensitive, hazardous parts and should therefore be placed away from childrens reach and so that it cannot fall down. Clean the exterior of your satellite receiver with a dry and soft cloth. Never let any form of liquid come into contact with the receiver as this can damge the components and destroy the receiver. Never use abrasive materials to clean the receiver as this will damage the receiver finish.

WARNING !!!

Never remove the receiver cover - risk of electric shock!.

MAINS LEAD CONNECTION

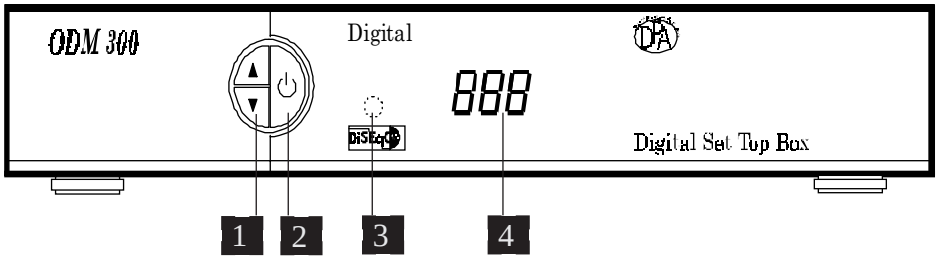
The satellite receiver should be connected directly to the mains outlet socket. The use of a mains extension lead is not recommended.

ENCLOSED PARTS

The following parts are enclosed:
ODM300 satellite receiver.
Remote control handset.
Two LR3 (AAA) batteries.
Coaxial cable (UHF connection).
User manual.

Descriptions

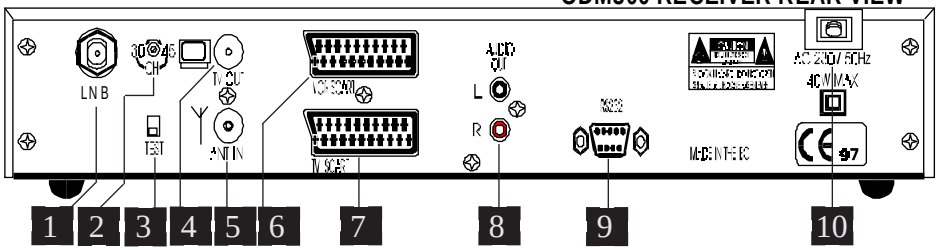
ODM300 RECEIVER FRONT VIEW



Front Panel:

1. Channel up/down.
2. Standby (on/off).
3. Remote sensor.
4. Channel readout display.

ODM300 RECEIVER REAR VIEW



Rear Panel:

1. LNB/dish connection.The coaxial cable to the dish is connected here.
2. UHF channel adjust. To tune the UHF output to the TV or VCR (30-45).
3. UHF test signal. To generate a test pattern to aid tuning of TV or VCR.
4. UHF Output. The UHF lead to the TV or VCR is connected here.
5. UHF TV antenna in. The TV antenna lead is connected here.
6. VCR scart (see page 5 for pin out). The scart to the VCR is connected here.
7. TV scart (see page 5 for pin out). The scart to the TV is connected here.
8. Hi-Fi audio out left & right. For amplifier or home cinema.
9. RS232 connector (see page 5 for pin out). An RS232 cable can be connected between here and a P.C.
10. Mains lead. Mains input 95-250V AC 50/60Hz.

Remote Control

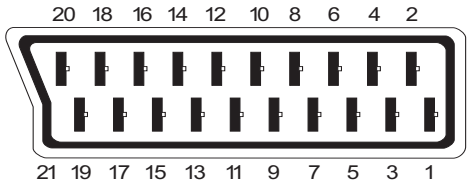
⏻	Stand-by (on/off).
🔇	Turns the sound off and on.
0-9	Select channel, teletext page numbers and MENU settings.
AUDIO	Change audio soundtrack.
DPA	Direct Program Access, Displays TV programme list in TV mode & radio programme list in radio mode.
MENU	Select MENU function.
TEXT	Change between teletext, mix & TV picture.
RADIO	Switch between TV channel mode & radio channel mode.
▲/▼	Channel up/down. Move up/down the menu lines. Move between channels in the "DPA". Teletext page up/down.
OK	Confirm selection in the DPA & menu's.
◀/▶	Selects alternative settings on the different menu lines. Adjust volume level. Programme information NOW/NEXT. Move forward/ backward pages in the "DPA".
STORE	Store settings in the menu's & channel organisation.
TIME	Display time & date in top right of screen (only if transmitted by broadcaster).
DELETE	Delete TV channels in TV mode & radio channels in radio mode.
SAT/CANCEL	Cancel out of menu pages. Switch to satellite picture (if scart connected).
VIDEO	Switch to video picture (if scart connected).
TV	Switch to TV picture (if scart connected).

Connector Details

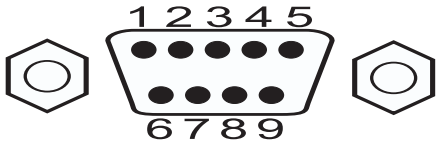
TV Scart Connector:

1. Right audio out.
3. Left audio out.
4. Audio ground.
5. Blue ground.
7. Blue out.
8. AV status out (0/5/12V).
9. Green ground.
11. Green out.
13. Red ground.
15. Red out.
16. RGB status out.
17. Video ground.
18. Ground.
19. Video out.
21. Ground (chassis).

No connection:
2, 6, 10, 12, 14, 20



Scart Connector Pin Out (rear view)



RS232 Connector Pin Out (rear view)

VCR Scart Connector:

1. Right audio out.
2. Right audio in.
3. Left audio out.
4. Audio ground.
5. Blue ground.
6. Left audio in.
7. Blue in.
8. AV status in.
9. Green ground.
11. Green in.
13. Red ground.
15. Red in.
16. RGB status in.
17. Video ground.
18. Ground.
19. Video out.
20 Video in.
21. Ground (chassis).

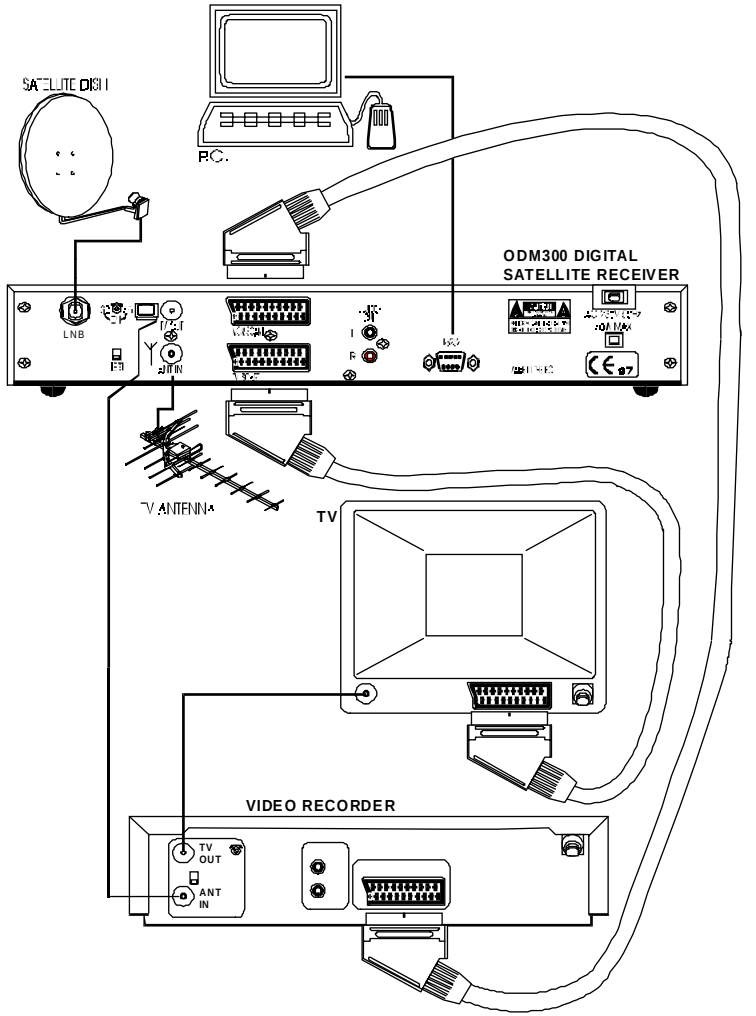
No connection:
10, 12, 14

RS232 Serial Connector:

1. No connection.
2. RX data input.
3. TX data output.
4. No connection.
5. Ground.
6. No connection.
7. RTS output.
8. CTS input.
9. No connection.

Connection

Connecting the ODM300 to TV, VCR, dish, TV antenna, & P.C.



Installation

CONNECT UP
Before connecting up the ODM300 it is essential that your satellite dish is installed as per the manufacturers recommendations. The ODM300 is connected as per the diagram on page 6 and as follows.

DISH
Your satellite dish should be connected to the **LNB** "f" type connector on the rear of the ODM300.

UHF AERIAL
Connect your UHF aerial to **ANT IN** on the back of the ODM300. Connect the **TV OUT** on the back of the ODM300 to your VCR or TV **ANT IN/RF IN** with the enclosed UHF coaxial cable.
The **TEST** switch on the rear of the ODM300 can be used to aid UHF tuning. Put this to the ON position (upper) and a test signal will be transmitted by the ODM300. Select an unused programme on your TV and tune the TV until black and white bars are visible. The same can be done to tune the ODM300 to your VCR. The UHF channel from the ODM300 can be tuned between 30-45 using a small screwdriver in the **CH** adjustment on the back panel.

SCART
If your TV or VCR is equipped with SCART connectors then we would recommend that you connect up using these to improve picture and audio quality.

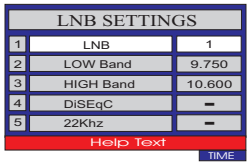
HI-FI
Hi-fi or home cinema equipment can be connected to the AUDIO OUT left and right RCA connector on the back of the ODM300.

P.C.
A PC can be connected to the RS232 connector on the back of the ODM300. This is used for upgrading the ODM300 with the latest software allowing enhanced features etc. Please consult your dealer for the latest details.

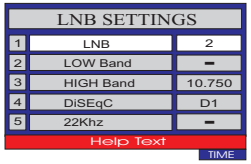
LNB Setup

The local oscillator settings (LO) for the LNB's connected to the ODM300 must be set before channel search can be carried out. Many LNB's have 2 LO which are switched between by a 22Khz tone signal from the ODM300. For frequencies over 11.699 the ODM300 will generate a 22Khz signal and select the **HIGH LO.**

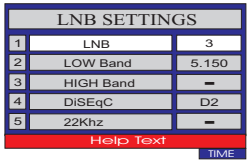
LNB SETUP
From the **MAIN MENU** select **4 (Installation)** using the numeric keys (direct) or arrow keys up/down (navigation) then **OK** to pick highlighted selection.
From the **INSTALLATION** menu select **1 (Install LNB)**. Then select **1 (LNB Settings)**. In the **LNB SETTINGS** menu you can change between **LNB 1-32** using the arrow keys right/left when option **1** is highlighted. Pick the LNB number you would like to edit. This would normally be **LNB 1** for a single LNB setup. Select option **2 (LOW Band)** and key in the **LOW LO** using the numeric keys and **OK** to confirm. Select option **3 (HIGH Band)** if appropriate and key in the **HIGH LO** and **OK** to confirm. Press **STORE** to save LNB changes. Press **SAT/CANCEL** to move back out of the MENU's
In the **INSTALL LNB** menu option **2 (LNB Power)** allows the LNB power to be switched **Off** for connection with an analogue receiver.



UNIVERSAL LNB
Settings for Universal type LNB with 2 x LO connected to ODM300 with no DiSEqC switch.



STANDARD LNB
Settings for LNB with single LO of 10.750 connected to ODM300 with DiSEqC switch on D1



C-BAND LNB
Settings for C-Band LNB with LO of 5.150 connected to ODM300 with DiSEqC switch on D2

NOTE IF NO DiSEqC SWITCH IS CONNECTED TO THE ODM300 THE SETTINGS OF OPTION 4 & 5 WILL HAVE NO EFFECT.

Automatic Search

AUTOMATIC CHANNEL SEARCH

Select **MENU** with the **MENU** key on the remote control. Select **4 (Installation)**. Select **4 (Channel Setup)**. Select **1 (LNB)** and using the arrow keys right/left select the correct LNB that has been setup previously for the channels you would like to scan. Select **2 (Frequency)** and enter the frequency you would like to scan using the numeric keys then **OK** to confirm. Select **3 (Polarity)** and choose the correct polarity using the arrow keys right/left. Select **4 (Symbol Rate)** and enter the Symbol Rate using the numeric keypad and **OK** to confirm. An **Auto** Symbol Rate search can be carried out by selecting **4 (Symbol Rate)** and before entering a frequency with the box showing 5 dashes pressing **OK**. The box would now show **Auto**. Please note that we would recommend entering the correct Symbol Rate if known as the Auto search feature will take longer to search due to the large search range that has to be perfomed.

Option **5 (FEC Code)** can be left set to **Auto** or changed to the required FEC code using the arrow right/left keys. If the FEC code is not on Auto and the FEC rate being transmitted is not the same as that selected , the signal will not be locked (we would recommend only changing the FEC code from Auto on very weak signals).

After entering the details above a search can be started by selecting **7 (Start Scan)**. The display will now show the **Start Scan** screen and indicate if **FEC Lock** & **QPSK Lock** have been achieved. Any **NEW** channels found will be added to the TV or RADIO channel list.

AUTOMATIC NETWORK SEARCH

An automatic network search (scan multiple transponders) can be carried out by selecting a scanned channel and going through the procedure above with the addition of switching option **6 (Auto Scan All Channels)** to **On** before selecting **Start Scan**. If the Auto Scan box shows **Unavailable** then no Auto scan can be carried out as the transmission does not carry the Auto Scan information in the table known as the NIT. The **Auto Scan** multiple transponders can only be enabled if the information is transmitted by the broadcaster and the option can be switched to **On**.

USER MANUAL ODM-300

Manual Input & Edit

Some channels may require manual entry either because they do not transmit the necessary tables containing the PID's or are shown as **ENCRYPTED** when they are not. Channels which are described by the broadcaster as encrypted when they are not must be added manually as detailed below.

DECODING CLEAR CHANNEL'S SHOWN AS ENCRYPTED

Select the channel. Press **MENU**. Select **4 (Installation)**. Select **4 (Channel Setup)**. Select **8 (Manually Input PID's)**. Verify that there are values in the Video, Audio & PCR PID boxes (if they are set to 0 then the PID's will have to be set manually as detailed below). Select **6 (Add This Channel To Channel List)**. The channel will be added to the end of the channel list and will now decode when selected provided it is not encrypted.

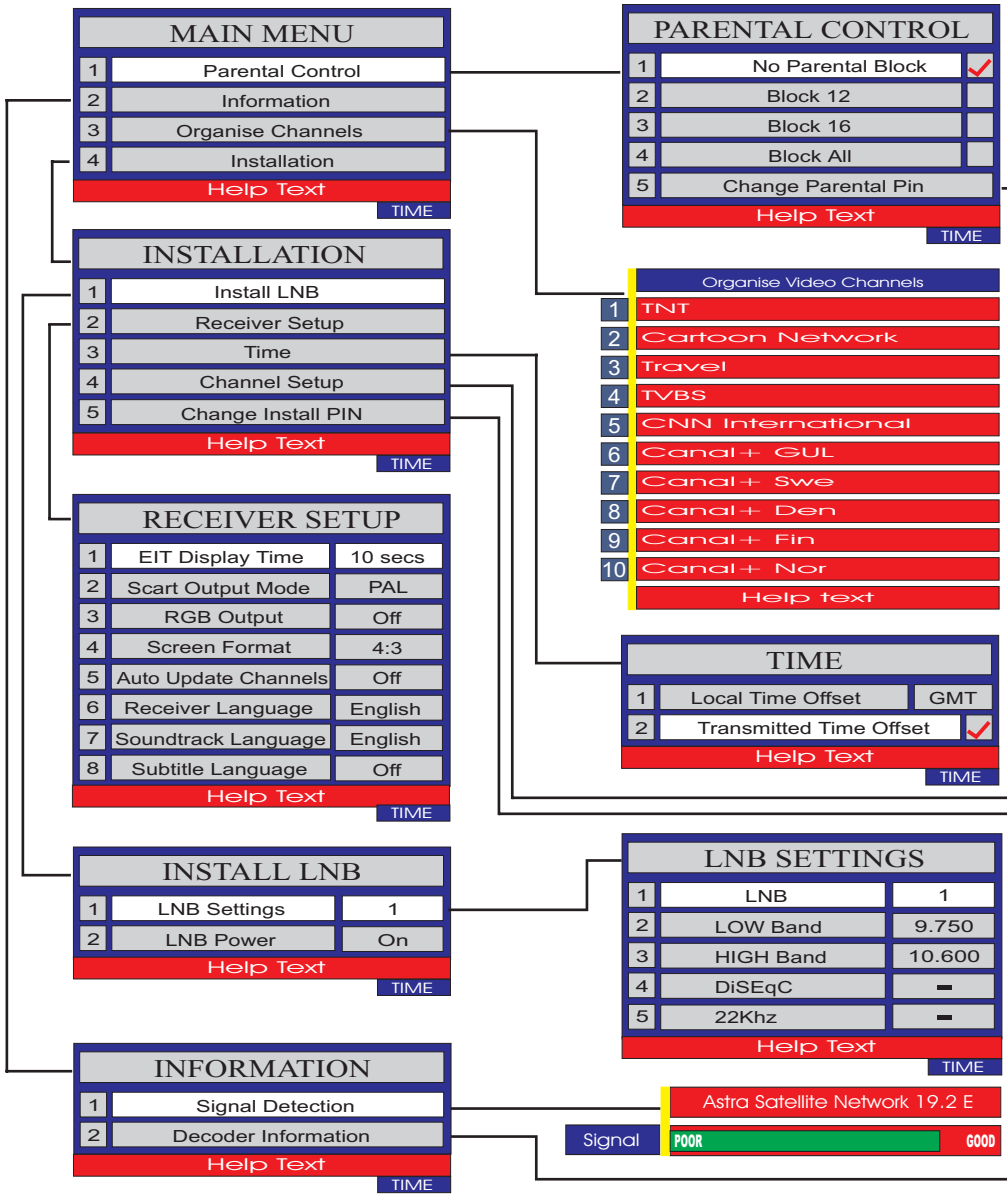
MANUAL CHANNEL INPUT

A channel can be manually input by going through the procedure for Automatic Channel search but instead of selecting **7 (Start Scan)** select **8 (Manually Input PID's)**. Then enter the Video, Audio, PCR & Teletext PID in decimal form (hex shown in brackets). Select **5 (New Name)** and a name can be entered for the channel by highlighting the new character and pressing OK (delete to delete a character). Press **STORE** to move back to the **MANUALLY INPUT PID's** MENU and press **6 (Add This Channel To Channel List)** to add to channel list. A channel with no Video PID will be added to the RADIO channel list.

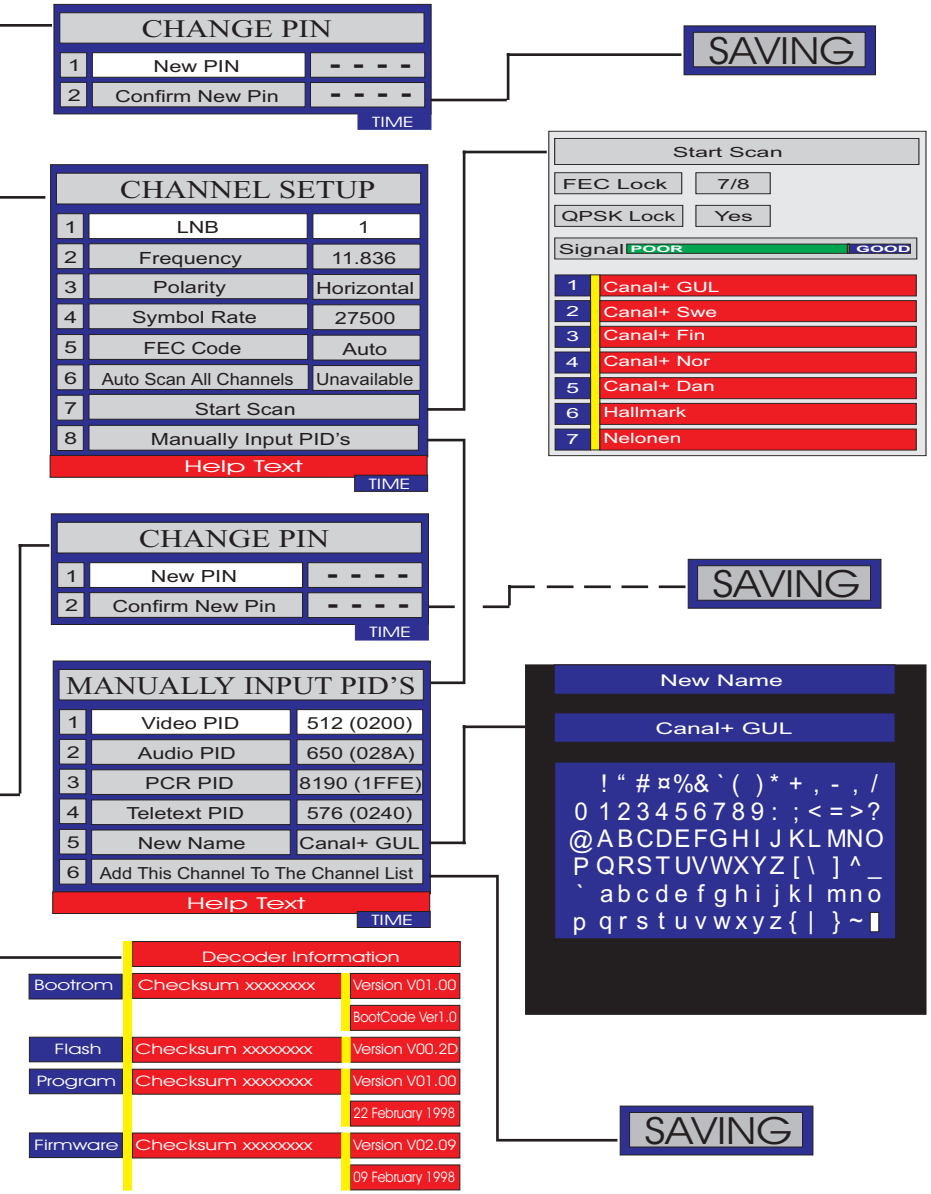
EDITING CHANNEL PID'S

This feature should only be used after ensuring that the PID's to be entered are valid. Typing invalid PID's will cause the receiver to continually reset when the channel is selected. Choose the required channel. Select **MENU**. Select **4 (Installation)**. Select **4 (Channel Setup)**. Select **8 (Manually Input PID's)**. The various PID's can now be edited. The PID's should be entered in decimal form (HEX shown in brackets). After entering the new PID's these can be stored by pressing **STORE** or a new channel can be added to the channel list with these values by selecting **6 (Add This Channel To The Channel List)**.

Menu Flow Chart



Menu Flow Chart cont.


CHANGE PIN
1 New PIN - - - -
2 Confirm New Pin - - - -
TIME
SAVING
CHANNEL SETUP
1 LNB 1
2 Frequency 11.836
3 Polarity Horizontal
4 Symbol Rate 27500
5 FEC Code Auto
6 Auto Scan All Channels Unavailable
7 Start Scan
8 Manually Input PID's
Help Text
TIME
Start Scan
FEC Lock 7/8
QPSK Lock Yes
Signal POOR GOOD
1 Canal+ GUL
2 Canal+ Swe
3 Canal+ Fin
4 Canal+ Nor
5 Canal+ Dan
6 Hallmark
7 Nelonen
CHANGE PIN
1 New PIN - - - -
2 Confirm New Pin - - - -
TIME
SAVING
MANUALLY INPUT PID'S
1 Video PID 512 (0200)
2 Audio PID 650 (028A)
3 PCR PID 8190 (1FFE)
4 Teletext PID 576 (0240)
5 New Name Canal+ GUL
6 Add This Channel To The Channel List
Help Text
TIME
New Name
Canal+ GUL
! " # ¤ % & ` ( ) * + , - . /
0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ A B C D E F G H I J K L M N O
P Q R S T U V W X Y Z [\ ] ^ _
` a b c d e f g h i j k l m n o
p q r s t u v w x y z { | } ~
Decoder Information
Bootrom Checksum xxxxxxxx Version V01.00
BootCode Ver1.0
Flash Checksum xxxxxxxx Version V00.2D
Program Checksum xxxxxxxx Version V01.00
22 February 1998
Firmware Checksum xxxxxxxx Version V02.09
09 February 1998
SAVING

Editing Name, Line Up etc.

EDITING CHANNEL NAME

Choose the required channel. Select **MENU**. Select **4 (Installation)**. Select **4 (Channel Setup)**. Select **8 (Manually Input PID's)**. Select **5 (New Name)**. In the New Name MENU the name can be edited by highlighting the new character and presssing **OK**. A character can be deleted by pressing **DELETE**. When the name is correct press **STORE,** you will now move back to the **MANUALLY INPUT PID's** screen. Pressing **STORE** again will update the channel name of the present channel. Pressing **6 (Add This Channel To The Channel List)** will add a new channel to the channel list with the new name and other settings.

SORTING CHANNEL LINE UP

The channel line up can be organised to suit your requirements. When in TV mode the TV channels will be organised and when in RADIO (press RADIO to change between TV/RADIO) mode the RADIO channels will be organised. Select **MENU**. Select **3 (Organise Channels)**. Highlight the required channel using the arrow keys, press **OK** to ***"lift"***, move to new position and press **OK** to ***"drop"***. A channel can be deleted by highlighting, pressing **DELETE** then **DELETE** to confirm. Press **STORE** to save changes.

PARENTAL CONTROL

Parental control can be switched ON to prevent unauthorised viewing. Select **MENU**. Select **1 (Parental Control)**. Highlight required option and press **OK** then **STORE** to save change. ***Block 12 & Block 16 will only operate if the broadcaster*** transmits the correct viewing age details with the programme.

TIME SETTING

Select **MENU**. Select **4 (Installation)**. Select **3 (Time)**. Tick option **2** to have the time set by the broadcaster over the air or don't tick this option and set the time by highlighting option **1** then use the arrow keys right/left to change +/- GMT until the correct time is displayed at the bottom of the **MENU**. Press **STORE** to save new settings before exiting.

Receiver Settings

RECEIVER SETTINGS

Select **MENU**. Select **4 (Installation)**. Select **2 (Receiver Setup)**.
Option **1** adjusts the length of time the programme information is displayed on the screen after channel change. This can be adjusted between **Off** and **31** seconds.
Option **2** changes the video output mode between **PAL**, **NTSC** & **Auto** (**Auto** will output **PAL** when decoding **PAL** and **NTSC** when decoding **NTSC**).
Option **3** switches **RGB Output On** or **Off**.
Option **4** changes screen format between **4:3** & **16:9** (only if widescreen transmission).
Option **5** when **Off** if channel PID's are changed by user to incorrect values these will not be automatically updated by the receiver, when new channels or deleted channels are found these will not be added to channel list. When **On** new channels or deleted channels found will be added to channel list and PID's will be changed automatically if these have been modified by user to incorrect values.
Option **6** sets the receiver **MENU** language.
Option **7** sets default **Soundtrack Language**.
Option **8** sets **Subtitle Language** or switches subtitles **Off**.
Press **STORE** to save any changes.

CHANGE PARENTAL & INSTALLATION PIN's

Select **MENU**. Select either **1 (Parental Control)** or **4 (Installation)** depending which **PIN** you would like to change. Select **5 (Change PIN)**. Key in new **PIN** then key in again to confirm. The Parental & Installation PIN is factory set to 0000 which disables the PIN feature. Setting to any other value sets the PIN active.
Factory default PIN is 3259 which will always work in the event that you loose your PIN.

FACTORY RESET

A factory reset sets receiver to default values and all stored channels are lost.
Select **MENU**. Select **3 (Organise Channels)**. Simultaneously press **channel up/down** on the receiver front panel. You will be prompted to press **OK** to confirm factory reset. Press **OK** on handset to perform factory reset.

Technical Specification

General

Number of Channels	999 SCPC & MCPC
Front panel	Channel up/down Standby IR sensor 3 Digit LED channel number display
Power	95-250V AC 50/60Hz.
Power consumption maximum	40W
Dimensions	W=340mm, D=256mm, H=67mm
Weight	2 kg

Connections

TV	SCART (video, L/R audio & RGB out)
VCR	SCART (video, L/R audio out & video/RGB/audio loop through)
Modulator	PAL I, channel 30-45, 77dBuV typical
Antenna	F type, 14/18V (400mA max.)& 22kHz
Audio	2 RCA phono L/R audio connectors
Serial	RS232 serial connector.

Tuner

Frequency range	950 - 2150 MHz
Type	Single input "F" connector.
Tuner I.F.	479.5 MHz
LNB control	14/18V(400mA max)22kHz & DiSEqC
Demodulator	2-45 Msps@ 1, 1/2, 3/4, 5/6, 7/8 FEC Suitable for SCPC & MCPC data rates.

System

Decoding (Video)	ISO13818 (MPEG-2) MP@ML, NTSC & PAL
Audio	22.05,32,44.1 & 48kHz sample rates.
Control	Motorola "Coldfire" @ 33MHz, 512k RAM & 512K flash memory
Video	Output 1V p-p, 75Ohm
Audio	Output 500mV rms, 600Ohm

USER MANUAL ODM-300

RSD
Communications Ltd.

A company with vision since our launch in 1987, RSD today is a leading force in the design and manufacture of satellite tv equipment.

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